South African grower has yet succeeded in fixing the number of rows in any breed to such a degree that *no variation* occurs in that respect.

In the course of a series of breeding experiments I am conducting, which are not yet completed, I have met with the following interesting case.

Thirty-three plants of "Arcadia" sugar-maize, each of which bore two well-developed ears, were studied as regards number of rows. On 21 plants the number on the upper ear was different from that on the lower, while on 12 plants the number was the same on each ear. Of the 21 plants on which the number of rows differed on the two ears, 13 had a larger number on the lower than on the upper, while 8 had a smaller number on the lower than on the upper. The distribution of rows was as follows:—

Class	Upper ear	Lower ear	Number of plants	Number of plants in each class
As many rows in lower as in upper	12	12	8	—
	10	10	3	—
	8	8	1	12
More rows in lower than in upper	10	14	1	—
	10	12	6	—
	8	12	3	—
	8	10	3	13
Fewer ears in lower than in upper	12	14	1	—
	12	18	4	—
	10	8	3	8
				33

Summary.

8	8	1	—
	10	3	—
	12	3	7
10	8	3	—
	10	3	—
	12	0	—
	14	1	13
12	8	0	—
	10	4	—
	12	8	—
	14	1	13
			33

The total number of ears producing any given number of rows was as follows:—

Rows	8	10	12	14	
Ears	11	23	30	2	Total 66

The "Arcadia" is a white sugar-maize obtained from a cross between a normally 8-rowed "Black Mexican" and a white flour-corn normally bearing a larger number of rows, but I do not know that either was pure bred, for row numbers and no subsequent selection in this line had been made.

It is generally supposed by maize-growers, in this country at any rate, that the number of rows is a definite, heritable character. Results obtained by crossing two other breeds, an 8-row and an 18-row (each believed to be pure as regards this character), have this year produced irregular results in the F_1 generation, for which I have not yet been able to account. However, the case described above seems to indicate that the development of rows is, within certain limits, a vegetative character depending in part on seasonal conditions and on food supply. This view is strengthened by the fact that this is the first year in which I have noticed 14-row ears in this breed, all the parent ears for two or three generations having been 8-, 10-, or 12-rowed (so far as I am aware). At the same time, there is ample indication that, within certain limits, row-numbers are inherited in the maize plant, but it is doubtful whether any South African strains are yet sufficiently pure-bred for this character to demonstrate the point with absolute certainty.

Joseph Burtt-Davy.
(*Government Botanist.*)

Department of Agriculture, Pretoria, April 17.

Absorption Markings in "K" Spectroheliograms.

In a letter published in Nature of March 30, Mr. Buss suggests that the evidence derived from some spectroheliograms taken by M. Deslandres at Meudon conflicts with that which I obtained from the Kodaikánal daily series.

There is no such "divergence of evidence" in reality. The dark marking shown on our plates of March 21, 1910, and described as vague and ill-defined, is doubtless much more clearly seen in the plates obtained with the Meudon high-dispersion spectroheliograph, which isolates the central absorption line K_3.

With the dispersion available in the Kodaikánal instrument, the K_3 line is about half the width of the camera slit, and photographs taken with the slit exactly central on K integrate the light of the absorption line and of the side components of the emission line K_2. As the dark flocculi or absorption markings seem to be entirely due to variations in intensity in the narrow absorption line, it is rather a matter for surprise that in our photographs they should be so clearly defined in many cases. In the original negatives taken on March 21, 1910, in addition to the broad, ill-defined shading already mentioned, there are clearly seen all the curious linear markings so beautifully shown in M. Deslandres' K_3 plate of this date, and I can find no appreciable differences in the contours of the markings.

With regard to the disappearance of the enormously extended marking between March 25 and 26, had Mr. Buss read the paragraph in my article referring to this with ordinary attention, he would not have suggested that the absence of the marking on the plate of March 26 was due to imperfect adjustment of the spectroheliograph slits. Very possibly the disappearance shown by our plates was not absolute, and K_3 or $H\alpha$ plates taken on the same day would have shown the marking, but if so the reduction in intensity compared with the previous day would have been marked.

The theory apparently advocated by Mr. Buss, that the absorption producing these markings takes place above the prominences, receives no support from our visual or photographic observations, and his remarkable observation of a dark flat cloud hovering over the bright prominence at each successive appearance east or west seems to be unique! No trace of so extraordinary a feature can be seen on any of our numerous photographs of this prominence.

J. Evershed.

Kodaikánal Observatory, April 18.

Calendar Reform.

May I trouble you with one or two observations on the excellent article which appeared in Nature of April 27.

Referring to the application of the principle of the *dies non*, or the setting aside of a day annually not included in the weekly enumeration, the author of the article says "the week can boast a most ancient lineage uninterrupted by the slightest break." Is this certain? I find Dr. Hale in his "Chronology," vol. i., p. 67, says:—"If the year of the Crucifixion was A.D. 31, as is most likely, it follows from an eclipse of the moon in Pingre's tables, April 25, at 9 afternoon, that the Paschal full moon that year fell on March 27, which in the calculations of Newton, Ferguson and Lamy, and the computation of Bacon is reckoned *Tuesday*," &c. I might adduce other reasons for doubting if the continuity of weeks has been uninterrupted. It must be remembered that for some time, at any rate, throughout the Roman Empire the odd day in leap year was treated as a literal—not merely as a legal—*dies non*, being regarded as part and parcel of the day preceding.

Nevertheless, I agree with the author that prejudice in this matter cannot be disregarded.

But no such objections can be stated to the proposal to apply this principle to the *months*, *i.e.* to treat the 365th and 366th days as without the monthly enumeration, and to equalise so far as possible the lengths of the months so as to give four quarters of 91 days, or 13 exact weeks.

It is hopeless to suggest that the present arrangement of months has any scientific or religious sanction or advantage.

I hope shortly to present to the public more fully the arguments in favour of this really non-contentious part of

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the proposal, to which in the first instance I think the reform should be confined.

Astronomers are apt to ask, *Cui bono?* But though the advantages of such a simplification would to them be small, they would be enormous, innumerable, and universal to the lawyer, the statesman, the banker, broker, &c.—indeed, to public business, commerce, and education in all civilised countries.

If without infringing any scientific principle or violating any religious symbolism benefits so general can be conferred so easily, I feel sure that scientific men will not stand in the way. Indeed, many of them are in the forefront of the movement.

What we want is a simply natural and naturally simple scheme. I am afraid that suggested by your correspondent—very ingenious as it is—is for that reason unsuited for general use.

ALEX. PHILIP.

The Mary Acre, Brechin, N.B.

FROM Mr. Philip's letter it appears that he, at all events, is conscious of the grave difficulties in the way of interrupting the continuous succession of the days of the week. It would be idle, therefore, to argue this point further, or to insist in greater detail on the importance of what Laplace called "peut-être le monument le plus ancien et le plus incontestable des connaissances humaines" (la semaine).

The date of the Crucifixion depends on questions relating to the Jewish, not the Christian, calendar. Now it seems incredible that the Hebrew communities have failed to maintain the order of the Sabbath without a break. If this be granted, the only deduction to be drawn from Mr. Philip's argument is that the Crucifixion did *not* occur in the year 31; which, indeed, according to the most recent chronological view, is most highly probable.

Mr. Philip's argument in favour of equalising the months will be received with interest when it appears. When, however, it is realised that the suggested change will not give us a fixed calendar, it may be doubted whether this minor adjustment, free from objection as it may be, will be found to have the necessary driving force behind it to secure its adoption.

H. C. P.

A Zenith Rainbow.

AN interesting rainbow was visible from the Bruges-Ostend canal here at 4.30 p.m. on April 17, in fair weather, almost due west.

The sight at once evoked the expression that the bow was inverted. It was clearly visible for several minutes, and subtended an arc of about 20°.

On shielding the eye from the direct light of the sun, this arc was seen to extend much farther, and formed part of a circle with the zenith as apparent centre, the radius of the circle being estimated from 10° to 15°.

The inside of the bow was violet, the colour following the usual order to red; the intermediate colours were, however, not characterised by the sharpness often seen in the ordinary rainbow.

The state of the sky at the time was misty near the horizon, but otherwise brilliant with high fleecy clouds, with a light wind from N.N.W.

The bow was backed by a thin broken cloud, which presented a "curtain" formation as far as the angle of the sun.

No rain was observed to fall at the time or during the day. No primary or secondary bow was visible, which, among other things, excludes the idea of the bow observed being a tertiary one.

It would be interesting to know whether this type of bow is of frequent occurrence.

K. C. KREYER.

7 rue des Lions, Bruges, Belgium, April 18.

IT appears from Mr. Kreyer's description that the phenomenon observed was the upper arc of contact of the halo of 46° radius. The altitude of the sun was about 24° at the time, so that the height of the point of contact would be about 70°, and the centre of the arc, accepting your correspondent's estimate of 10° or 15° radius, would be at an altitude of 80° to 85°. The phenomenon is described by Pernter as the most beautiful of all halo phenomena, and it occurs often when no trace of the 46° halo is visible; the colours, with the exception of the violet, are definite and brilliant, with the red towards the sun. The violet seen by your correspondent is more rarely present. The cloud with "curtain" formation was probably cirro-stratus, and would be formed by the ice crystals which give rise to halo-phenomena.

The bow observed is not of frequent occurrence (about seventy had been observed up to 1883), and it is interesting to have a record of it.

E. GOLD.

Meteorological Office, South Kensington,
London, S.W., April 27.

Daylight Saving!

THE following aspect of the Daylight Saving Bill does not appear yet to have been noticed.

A man who is accustomed to rise at 9 a.m., lunch at 1.30, dine at 7.30, and go to bed at 11.30 will naturally object to turning out of bed an hour earlier on a dull, grey, cold April morning. So, when the clocks are put forward, he will consider that the change is only nominal, and will continue to follow the old hours, rising at 10, lunching at 2.30, dining at 8.30, and going to bed at 12.30. When, however, the clocks are put back the weather is getting bad, and the pleasantest part of the day is after the blinds have been drawn and the gas lit; he will be glad of the extra hour's sleep in the dark morning, and the increased fireside comfort in the evening, and will be so accustomed to regard 10 o'clock as the time for getting up, 2.30 as lunch time, 8.30 as dinner time, and 12.30 as the time for going to bed, that he will certainly not want to go back to the old clock reckoning. Thus "daylight saving" will mean a saving of an hour's daylight in the dark winter months and a gain of an hour's gaslight.

"THE VOICE OF THE SLUGGARD."

DAYLIGHT AND DARKNESS.

WHATEVER may be thought of Mr. Willett's so-called daylight-saving scheme, it is impossible not to admire the persistence with which he pursues the idea, and secures support for it from city corporations, town councils, chambers of commerce, members of Parliament, and other people who are attracted by the advantages offered, and do not realise how unscientific the scheme is, or the gravity of the objections to the adoption of a variable standard of time-reckoning. We do not believe for an instant that the Government is likely to give facilities for legislation on the lines of the Summer Season Time Bill, however sanguine the promoters of the Bill may be As, however, a meeting at which the Lord Mayor presided, and the Home Secretary spoke, was held at the Guildhall on May 3, it is worth while to consider again some aspects of the proposals usually overlooked.

The promoters of the Bill have circulated a mass of literature, in which the advantages are emphasised and the objections disregarded. Among these communications is an article contributed to *Die Woche* by Dr. E. von Engel of Berlin, who supports warmly the proposition of accommodating the standard meridian of Greenwich to that of Berlin or Mid-Europe. We have no doubt he is perfectly sincere in his recommendation. At the same time, the advantages of making the hours of business in England coincide with those in Germany is entirely in favour of the latter country.

In consequence of this renewed earnestness and vigour of the daylight-saving movement, it is desirable to express, concisely and decisively, some fundamental objections to a scheme which can be made to present so much that is agreeable. This is the more necessary because there is a feeling that scientific men are inclined to display a selfish regard for their own convenience, and a contemptuous indifference to

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